

Subfamily *POMATOMINÆ* Gill.

Genus *POMATOMUS*, Lacépède.

Gonenion *Raf.*

Temnodon *Cuv. et Val.*

POMATOMUS SALTATRIX Gill.

Gasterosteus saltatrix *Linn.*

Scomber saltator *Bloch.*

Cheilodipterus heptacanthus *Lac.*

Pomatomus skib *Lac.*

Gonenion serra *Raf.*

Scomber plumbeus *Mitchill.*

Temnodon heptacanthus *Quoy and Gainard.*

Temnodon saltator *Cuv. et Val.*

This species is very abundant along the entire eastern coast of the United States.

Description of a new generic type of *MORMYROIDS* and Note on the arrangement of the genus.

BY THEODORE GILL.

The Mormyroids now known appear to be distributable among two sub-families and eight genera which may be briefly distinguished by the following characters :

- I. Dorsal very long, commencing in front of ventrals. Anal very short. Vomer covered by anterior processes of palatine bones.
 - Cerebellum entirely concealed above..... *MORMYRINÆ.*
 - Muzzle tubuliform..... *Mormyrus.*
 - Muzzle obtuse..... *Mormyrodes.*
- II. Dorsal commencing more or less behind the ventrals. Anal oblong or elongated. Vomer uncovered. Cerebellum and quadrigeminal bodies more or less exposed..... *PETROCEPHALINÆ.*
 - A. Mouth considerably in advance of the eyes.
 - 1. Anal rather shorter than dorsal..... *Isichthys.*
 - 2. Anal less than twice as long as dorsal (D. 17-26. A. 25-50).
 - a. Lower jaw without flap or barbel. Upper jaw longer..... *Marcusenius.*
 - Lower jaw prominent..... *Mormyrops.*
 - β. Lower jaw with a conical flap or barbel..... *Gnathonemus.*
 - 3. Anal three times as long as dorsal. Palatal teeth pisiform..... *Hyperopisus.*
 - AA. Snout produced. Mouth under eyes..... *Petrocephalus.*

MORMYRINÆ Gill.

MORMYRUS Linn.

Scrophicephalus *Sw.*

Mormyrus caschive *Hass.*

MORMYRODES Gill.

Mormyrodes hasselquistii = *Mormyrus hasselquistii* *Geoffroy.*

PETROCEPHALINÆ Gill.

ISICHTHYS-Gill.

Isichthys henryi *Gill.*

1862.]

MARCUSENIUS Gill.

Marcusenius anguilloides = Mormyrus anguilloides *Linn.*

MORMYROPS Müller.

Mormyrops cyprinoides = Mormyrus cyprinoides *Linn.* (nec Geoffroy.)

GNATHONEMUS Gill.

Gnathonemus petersii = Mormyrus petersii *Günther.*

HYPEROPISUS Gill.

Hyperopisus dorsalis = Mormyrus dorsalis *Geoffroy.*

PETROCEPHALUS Marcusen.

Petrocephalus bane = Mormyrus bane *Val.*

ISICHTHYS Gill.

Body anguilliform, with the height subequal as far as the caudal peduncle, which is abruptly attenuated. Scales rather small. Head oblong, about twice as long as high. Snout scarcely projecting, and convex. Mouth transverse; the periphery of each jaw convex in front. Teeth compressed and with emarginated summits. Eyes small, considerably behind the vertical from the mouth. Nostrils simple, small, two in a longitudinal line in front of each eye. Dorsal fin elongated, nearly equalling half the total length, separable from the back at the base of the membrane between the rays. Anal fin rather shorter than the dorsal, coterminal with it and constructed at its base like the dorsal.

This genus is at once distinguished from all others of the family by the elongation and comparative proportions of the dorsal and anal fins. The peculiarity of the dorsal and anal fins recalls to mind the nearly similar character found in some of the Balistoidæ, a coincidence which is the more noticeable as the Mormyroids have also the upper maxillary bones united like the Plectognathi.

ISICHTHYS HENRYI Gill.

The greatest height equals a tenth (10) of the length (*exclusive of the caudal fin*), and that at the ventrals an eleventh ($\cdot 09$) of the same; the latter is nearly two times and a half as great as the height behind the vertical fins ($\cdot 03\frac{1}{2}$). The head to the margin of the operculum forms almost a seventh (14) of the length, and is twice as great as the height, or two times and a half as great as that of the eye ($\cdot 05\frac{1}{2}$). The eye is contained about ten times in the head's length. The interorbital area rather exceeds a fifth ($\cdot 03$) of the same length, while the length of the snout equals a fourth ($\cdot 03\frac{1}{2}$).

The dorsal fin commences considerably before the end of the anterior half of the length ($\cdot 45$), and its own length equals half of the total ($\cdot 50$). The greatest height equals that at the pupil ($\cdot 05\frac{1}{2}$); its posterior portion appears to have been lower. The anal fin commences nearly even with the second half of the length (51) or under the seventh or eighth dorsal ray, and is coterminal with the latter fin; its height at the middle exceeds that of the dorsal ($06\frac{1}{2}$) and at its produced and rounded posterior angle is still greater ($\cdot 08$). The pectoral fin equals an eleventh of the length ($\cdot 09$); the ventrals are inserted near the end of the third tenth of the length ($\cdot 38$) and each one equals two-thirds of the pectoral ($\cdot 06$).

The scales are small, there being about 135 along the lateral line; the 38th to 41st is on the vertical from the ventral fin; the 50th to 53d from the origin of the dorsal, and the 64th to 67th from the anal. At the vertical of the origin of the dorsal fin, there are twenty-six rows of scales, of which ten are above the lateral line, and at that of the anal, twenty-one rows, of which nine are above.

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The color is dark reddish or chocolate brown.

A single specimen, for which there is no indication of locality, is in the Smithsonian Institution, and formed part of the collection of the former National Institute of the city of Washington. It is in rather poor condition, the caudal fin having been entirely lost. The length of the remaining portion is seven inches. I am disposed to believe that it was sent from Liberia.

I dedicate the species to my friend Prof. Henry, of the Smithsonian Institution, to whom I have been so much indebted for the privileges of studying the rich collections of the Institution, and especially of investigating the class to which the present species belongs.

On the Synonymy and Systematic Position of the Genus *ETELIS* of Cuvier and Valenciennes.

BY THEODORE GILL.

In the second volume of the "Histoire Naturelle des Poissons," Cuvier and Valenciennes have distributed among two primary sections those species of their family of Percoids, which have ventral fins with five rays and inserted beneath the pectoral, and which have seven branchiostegal rays. Those sections are distinguished by the condition of the dorsal fin; the first having two dorsals, or a dorsal emarginated to its base; the second having a single dorsal.

In the section distinguished by the division of the dorsal fin, and in that subsection whose representatives have canine teeth mingled with others, Cuvier and Valenciennes have placed a generic type which they have technically characterized by the scarcely apparent dentelure of the preoperculum, the single opercular point, and the contiguous dorsals, and which was distinguished from *Lucioperca* (recte *Stizostedion*, Raf.) by the wholly villiform teeth of the palate, and the presence of two* opercular spines. The *Etelis* is, however, not at all related to *Stizostedion*, but, as will be hereafter shown, belongs to a different family. It is a fish distinguished by its slender and elegant symmetrical form, the deeply-forked caudal, whose lobes are elongated, and acute, and especially by the remarkably large size of the eyes. The first dorsal of this fish is stated by Cuvier and Valenciennes to terminate at the base of the second. Only one species has been referred to the genus. That species is the *Etelis carbunculus*, of Cuvier and Valenciennes, and has been found in the archipelago of the Seychelles and at the Isle of France.

In the second section of the same division of Percoids, characterized by the single dorsal fin, and in the subsection distinguished by the possession of canine teeth, Cuvier and Valenciennes have placed the genus *Serranus*. To that group of the genus for which they have accepted Bloch's name *Anthias*, they have referred a species which they have named *Serranus oculatus*, and which is distinguished from all others of that section by the comparatively slight connection between the spinous and soft portions of the dorsal. This fish is likewise remarkable for its slender symmetrical shape, a deeply-forked caudal fin with prolonged and acute lobes, and also especially for its very large eyes. Of the dorsal fins it is simply said that the spines diminish in length from the third to the tenth, which is the last and the lowest.

On a comparison of the two fishes thus enumerated, it is found that they agree in all respects. The *Etelis carbunculus* and the *Serranus oculatus* have the same form of the head and body, the same form and structure of the fins, the same armature of the bones of the head, and the same large eyes, and the same dentition. There is no generic distinction between them whatever,

* *Etelis* has two opercular spines and not one as previously stated.